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Specific Language Impairment and Language Delay: an Analysis of Developmental Language Disorder Characteristics in a Group of Romanian Children

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Abstract

Introduction: Although specific language impairment (SLI) or developmental language disorder (DLD) and language delay (LD) are fairly well documented language disorders, the specificity for Romanian children has not been clearly highlighted.

Objectives: This study aims to identify the common and differential elements of the DLD (SLI) and LD through a quantitative and qualitative analysis.

Methods: We considered two groups of children: one diagnosed with DLD (n = 67) and another with LD (n = 57), aged 3 to 12 years (M age = 5 years 8 months). Tests for establishing the language psychological age and the active and passive vocabulary, recording the phonetic inventory and language sample analysis (LSA) for qualitative observations were used as analysis tools. These instruments proved to be useful in establishing the specificity of each disorder and formulating the prognosis.

Results: A statistical analysis (Student's *t* test) was conducted in order to compare the children in LD and DLD groups. The data obtained from this analysis along with LSA indicate that the language skills differ between the two groups in the following aspects: lexical, pragmatic, semantic, syntactic, morphological and phonological. Significant differences ($p < .05$) occur for the start of speech therapy age, phonological disorder, passive vocabulary and language psychological age. Results for active vocabulary did not indicate a statistical difference between LD and DLD children.

Conclusions: The characteristics of DLD and LD were noted in this study. These language disorders have specific markers, which imply differentiated measures, from the diagnosis phase to the construction of the remediation plan. The study is a prospective one, this issue being the subject for further exhaustive approaches.

Key words: specific language impairment; developmental language disorder; language delay; phonetic inventory; language psychological age; expressive and receptive vocabulary.

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1. Introduction

1.1. Language disorders of unspecified origin – an overview

One of the main categories of language disorders involves delays in language development. Both academic studies and clinical experience show that not all children easily learn how to speak. According to some authors, about 7% of kindergarten-aged children (roughly 4 to 5 years old) have various disorders that can be classified as language delay (Prelock and Hutchins, 2018; Tomblin, Records, Buckwalter, Zhang, Smith, and O'Brien, 1997; Tomblin, Zhang, Buckwalter, and O'Brien, 2003). The terminology used for these disorders is not homogeneous. Romanian speech and language therapy practice does not clearly distinguish between language delay (LD) and specific language impairment (SLI) or developmental language disorder (DLD), which is the most recent name for this language condition (Bishop, Snowling, Thompson, and Greenhalgh, 2017).

DLD is characterised by atypical language development. Children with DLD are clinically similar to other children, with one exception: their significant difficulties in using and understanding oral language, which occur in the early stages of development. This can influence the subsequent mastery of written-reading language. (Adlof, 2017; Isoaho, Kauppila, and Launonen, 2015).

These difficulties are not associated with other factors such as: general learning difficulties, other neurobiological conditions (e.g. cerebral palsy), sensory impairments (e.g. hearing, visual), or a pervasive developmental disorder. Children with DLD (SLI) have expressive and receptive difficulties which are strictly limited to the sphere of language, hence the term "specific" (Gina Conti-Ramsden, 2009).

There is a lot of uncertainty regarding clinical labeling of language disorders with unknown origin. An inventory of these terms indicates no less than 36 variants that have been used in the last 200 years (Leonard, 2020).

A consensus will have to be reached on the terminology used (Cunningham, Kwok, Turkstra, and Oram Cardy, 2019), as there are both conceptual and methodological differences between the two diagnostic labels used for apparently similar clinical manifestations. The cultural areas where speech therapy intervention has a more recent history could adhere to the recommendations made by the multidisciplinary team and CATALISE consortium (Bishop et al. 2017).

Throughout this paper the terms DLD and SLI are considered to be quasi-equivalent. Relevant professional bodies can opt for one term or the other, depending on new worldwide research findings.

1.2. DLD taxonomic classification

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), communication disorders include language, speech, and communication deficits (American Psychiatric Association, 2013). Each category comprises clear elements that guide the differential diagnosis. Therapeutic intervention is often the concern of specialists with different areas of expertise. Therefore, it is essential to establish some common terms of reference. Currently, in Romania, there are three parallel coding systems in place:

- International Statistical Classification of Diseases and Related Health Problems (ICD-10) (World Health Organization,1993)
- DSM-5
- E. Verza Language Impairments Classification (Verza, 2003).

These differences in the way that a certain language disorder is referred to, create additional barriers both in the actual research and the dissemination of research findings, but also, they make communication between specialists in the same field or related fields of activity more difficult.

The classification proposed by Verza takes into account etiological, linguistic, morphological, and symptomatic criteria, in an attempt to be exhaustive. Synthetically, language disorders can be grouped as follows:

- Speech articulation disorders (dyslalia; rhinolalia; dysarthria);
- Rhythm and fluency disorders (stuttering; logonevrosis; tachylalia; bradylalia; aphtongia; Chorea-based disorders);
- Voice disorders (aphonia; dysphonia; phonasthenia);
- Reading and writing language disorders (alexia; dyslexia; agraphia; dysgraphia);
- Polymorphic language disorders (alalia; aphasia);

- Language development disorders (psychogenic, selective or voluntary mutism; delay in general speech development) (Verza, 2003).

In Romanian speech therapy, DLD is assimilated to LD, although some studies indicate the two might have different features and etiological factors (Evans and Brown, 2016; Dollaghan, 2007). According to Gil (2018) "Delay in language development leads, in principle, to a uniform impairment of performance in phonological, lexical and syntactic language tests, which reveals a 'harmonious' profile whose essential character is the gap with the control groups from the same age" (p. 387). Simple language impairment is normally reducible before the age of 6 or 7, or when the social and educational stimulation conditions change (Gérard, 1993).

1.3. DLD and LD diagnosis

DLD has been described as a significant language impairment that has no obvious cause and cannot be attributed to physical, anatomical, social or intellectual problems (Leonard, 2014). Although it is a prevalent condition in childhood, it is often unrecognised or labeled as a simple delay (false negative diagnostic error) or as a part of a more serious development problem (false positive diagnostic error). Over time, different labels have been used to describe this condition, including *aphasia*, *dysphasia*, *developmental aphasia*, *infant speech*, *delayed language*, *deviant language*, *developmental impairment language*, *language-specific impairment*, *language disorder*, *expressive language disorder*, *expressive-receptive language disorder*, *language learning disability*, *language learning impairment*, and *developmental learning disorder* (Leonard, 2020).

Here, we are talking about DLD for children with a significant and long-term delay in oral language development; that is a "structural" disorder, which is different from a simple delay in language development. The latter, by contrast, could be considered a "functional" disorder (Bishop, 2008; Gérard, 1993).

A *structural disorder*, unlike a *functional* one, can lead to a learning pathology that severely hinders school life and even the individual's social and professional integration. Therefore, it can be a real handicap throughout the child's life.

The language deficit in children with DLD includes a wide range of manifestations, e.g. phonological, morphological, morphosyntactic, lexical, and pragmatic language use. For some children this deficit covers all these aspects of language, whilst for others it is limited to a single domain (for example, the use of deictic elements).

We used the widely accepted criteria for diagnosing SLI (DLD), as shown in Table 1 (Zourou, 2010).

Table 1.
Typical criteria for the diagnosis of SLI (DLD)

Factor	Criteria
Language	At least -1.26 DS below the average in language tests
IQ (non-verbal)	≥ 85
Hearing	> 70dB
Neurological functioning	Absence of severe neurological symptoms, cerebral lesions, or of serious psychopathological disorders of the psychotic type
Social interactions	No serious educational or emotional deficiency

ICD-10 diagnosis code *F80.9 Developmental speech and language disorder, unspecified* provides the most relevant benchmarks for LD. This is described as a category of disorders characterised by impairment in the development of an individual's language abilities, which is in stark contrast to his / her non-verbal intellect.

Given the lack of more selective or detailed criteria in the Romanian speech therapy practice, there is sometimes a tendency to widen the scope of the LD diagnosis to include any deviation from the usual

evolution of receptive and expressive language, which we consider to be unjustified.

1.4. Tools used for DLD diagnosis

Language itself is a complex phenomenon and its pathology also takes many different forms. There are no perfectly overlapping language profiles not even for normal language development, but even less so for specific language disorders or non-specific language disorders (which bring together cognitive, neurological, or genetic pathology). Apart from language-related facts, different authors also consider nonverbal factors, such as: visual-spatial reasoning, verbal and visual-spatial tactical and strategic memory, attention focused on perceptual field consisting of visual, tactile-kinesthetic and auditory data, motor skills and psychomotor (Bishop, 2000; Conti-Ramsden, 2009). Moreover, the presence of certain associated cognitive disorders, albeit minor (or borderline), can influence, sometimes decisively, the concrete language profile, the severity of its deficiencies and the prognosis that the specialist formulates.

For the early identification of DLD, either standardised language tests or LSA are normally used, or indeed a combination of these. In spoken language, children with DLD normally show grammatical and lexical difficulties. Therefore, the combined use of these two procedures is the most effective clinical approach (Eisenberg and Guo, 2016).

The theoretical model for analysing language was originally introduced by Bloom (Bloom, 1978), (Lahey and Bloom, 1988); this would be later adopted by many speech and language pathologists (SLP). The model considers three major language constituents: *the content*, *the form* and *the use* of language. For each of these there are more or less standardised evaluation methods.

This study aims to identify the particularities of children with DLD and LD through a quantitative and qualitative analysis. The following evaluation tools were used:

- Phonetic inventory (Macrae, 2017; McLeod and Baker, 2014; Skahan, Watson, and Lof, 2007)
- Establishing the language psychological age (LPA) (Descoeudres, 1924; Vrăsmaş, Muşu, and Stănică, 1997)
- Active and passive vocabulary test (TVAP) (Deltour and Hupkens, 1980a, 1980b).

Although these tests are used in speech therapy, there is no consistent data reporting on the results of their combined use. The choice of these tools is supported by several arguments.

Completing the phonetic inventory is done for each child with language disorders. This is standard practice, which is justified by the characteristics of the Romanian language, as well as by the fact that it is very important to understand the etiological factors of language disorders (Cabbage, Farquharson, Iuzzini-Seigel, Zuk, and Hogan, 2018; Hayiou-Thomas, Carroll, Leavett, Hulme, and Snowling, 2017; Bodea Haţegan, 2016).

The test for determining LPA age is adapted for Romanian children. This test is frequently used in speech therapy practice in Romania because it provides valuable information about the level of language skills development in relation to the child's age. Besides, the test is attractive and easy to apply in speech therapy settings.

Various adapted tools are used to test passive (receptive) and active (expressive) vocabulary (for instance, *Rey Vocabulary Test, adapted*, Vrăsmaş, 1997). There is no agreement on this, amongst speech therapists in Romania. Because of the similarity between French and Romanian languages, we generally prefer to use TVAP designed by Deltour and Hupkens in Liège, Belgium. The advantages described by the test authors are indeed confirmed in practice, when used for Romanian children.

In this paper, we aim to answer the question whether the combined use of these tools can allow us to build clearly defined profiles for children with LD and SLI (DLD), respectively.

We consider that a simultaneous use of these tests enables us to draw a more precise linguistic profile, which in turn will allow SLPs to establish and confirm the differential diagnosis (whether DLD or LD) and implement an effective speech-language intervention, accordingly.

2. Material and Methods

2.1. Participants

For purposes of this research, 124 children with language development difficulties (25 girls and 99 boys), aged between 3 and 12, were selected (M age in years = 5.67). Out of these, 67 children (16 girls and

51 boys) were diagnosed with SLI (DLD), and 57 children (9 girls and 48 boys) were diagnosed with LD. The diagnosis was established according to ICD-10 criteria for F80.1 (*Expressive language disorder*) and F80.2 (*Mixed receptive-expressive language disorder*) respectively F80.9 (*Developmental language delay*) (World Health Organization, 1993). Parents had requested speech therapy out of concern about the children's poor language development. No child had any sign of any neurological disorders, sensory impairments or mental deficiency. All children are from the city of Iasi, in northeast Romania, and they attend either kindergarten or boarding school there. Their parents are employed, having educational levels between 3 and 7 according to the International Standard Classification of Education (ISCED) (UNESCO, 2011). All participating children's parents signed a consent form. The research was conducted in partnership with Pro Logos Iasi Association, a local NGO whose role was to have oversight of compliance with research ethical and deontological standards.

2.2. Selection criteria

The first selection criterion was the initial diagnosis of the 124 children – namely, LD for 57 children, and SLI (DLD) for 67. Some of the children also had speech sound disorders in addition to the main diagnosis established according to ICD-10. The second selection criterion was the lack of any cognitive impairments, neurological manifestations, or sensorial disorders. This was confirmed through anamnesis and interviews with the parents. The third criterion was children's participation in speech therapy (two sessions per week), at least three months before the beginning of the study. This criterion has the role of reducing the structure group's bias.

Table 2.
Study participants

	Diagnosis	
	LD	DLD
Gender	*n*	*n*
Girls	9	16
Boys	48	51

Note. $N = 124$ ($n = 57$ for LD and $n = 67$ for DLD). Participants were on average 5.67 years old (SD = 1.53).

2.3. Materials

The overall assessment of the children used several instruments, which are detailed below.

2.3.1. Phonetic inventory

This instrument consists of a speech-language album with 116 images and an answer recording sheet. The child names each image and the speech and language pathologist (SLP) writes down any potential pronunciation disorder they notice (e.g. omissions, substitutions, distortions) for all Romanian language phonemes, as well as their place in the word structure i.e. initial, middle, or final position. A sample recording sheet is shown in *Appendix A*.

2.3.2. Language psychological age (LPA) (Descoeudres, 1924; Vrăsmaş et al., 1997)

This test is recommended to be used with children aged 3 - 7 years of age. Different language skills are targeted by seven components of the test:

1. Antonymous (*with intuitive support*);
2. Filling in the gaps of a short narrative;
3. Digit span;
4. Knowledge of materials;
5. Antonymous (*without intuitive support*);
6. Naming colours;
7. Knowledge of verbs (receptive and expressive).

The scores for these seven sub-tests relate to a standard age, which indicates the child's language psychological age; this may be equal with, below, or above the child's chronological age. *Appendix B* illustrates some elements of this test.

2.3.3. Language Sample Analysis (LSA)

LSA is a speech therapy procedure, which consists of collecting data through spontaneous communication. It is a protocol for the clinical evaluation of children's language, which has constantly evolved over the last 40 years. Research shows that LSA guides the diagnosis in expressive language disorders, leading to

a personalised therapeutic approach; it also allows the recording of a child's progress (Blau, Lahey, and Oleksiuk-Velez, 1984; Brown, 1973; Channell, Loveall, Conners, Harvey, and Abbeduto, 2018; Crystal, Fletcher, and Garman, 1989; Heilmann, 2010; Tyack and Gottsleben, 1974).

LSA is a generic name for several indicators of linguistic development (both morphologic and syntactic), including Mean Length of Utterance (MLU), Number of Different Words (NDW), Total Number of Words (TNW); and Type-Token Ratio (TTR).

In the course of this research we have been particularly interested in lexical diversity, and how children use different morphological categories in spontaneous speech. Conversations with children have revealed the use of nouns, adjectives, verbs, adverbs, pronouns, numerals, prepositions, conjunctions and derivative morphemes. All observations were recorded in the speech therapy file of each child.

2.3.4. Active and Passive Vocabulary Test (TVAP) (Deltour and Hupkens, 1980a, 1980b)

The test takes between 10 and 20 minutes, and it comes in two versions – for 3 to 5 year-olds, and for 5 to 8 year-olds, respectively. The test was calibrated on a sample of 245 subjects (for 3 to 5 year-olds) and 300 subjects (for 5 to 8 year-olds). The grading is done on standard means / deviations of 3 months and development age.

The objective of the test is to evaluate the child's ability to express themselves (the active vocabulary) and their ability to understand lexicon (the passive vocabulary). The test has a number of characteristics that recommend it, in particular the short length of time that it takes to conduct it, the attractiveness of the test material, the calibration of the test, and the reliability of its results.

The following situations can be encountered when applying the test:

- The subject achieves good scores for both passive and active vocabulary (i.e. scores which are close to those expected for the chronological age);
- The subject achieves good scores for passive vocabulary (close to those expected for the chronological age) and significantly lower scores for active vocabulary;
- The subject achieves low scores for both passive and active vocabulary.

The test has been adapted for the Romanian language, which is similar to French, in many respects. Currently there is no other standardised vocabulary test that is used by SLPs in Romania.

For all the subjects involved in the study, we recorded the child's age at the start of the speech therapy (*Table 3*), the phonetic inventory (*Table 4*), active and passive vocabulary (*Table 5*) and the language psychological age (*Table 6*). In addition, the peculiarities of the child's spontaneous speech and their use of morpho-syntactic categories were also taken into account.

Table 3.

Mean age at the start of the speech therapy

Diagnosis	Gender	Mean age at the start of the speech therapy (years)
LD	Girls	5.28
	Boys	4.67
DLD (SLI)	Girls	5.86
	Boys	6.62

Table 4.
Phonetic inventory

Number of affected speech sounds					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	.00	29	23.4	23.4	23.4
	1.00	7	5.6	5.6	29.0
	2.00	7	5.6	5.6	34.7
	3.00	4	3.2	3.2	37.9
	4.00	6	4.8	4.8	42.7
	5.00	9	7.3	7.3	50.0
	6.00	4	3.2	3.2	53.2
	7.00	6	4.8	4.8	58.1
	8.00	12	9.7	9.7	67.7
	9.00	9	7.3	7.3	75.0
	10.00	8	6.5	6.5	81.5
	11.00	10	8.1	8.1	89.5
	12.00	4	3.2	3.2	92.7
	13.00	3	2.4	2.4	95.2
	14.00	2	1.6	1.6	96.8
	15.00	2	1.6	1.6	98.4
	18.00	1	.8	.8	99.2
	21.00	1	.8	.8	100.0
	Total	124	100.0	100.0	

Table 5.
Passive and active vocabulary

Diagnosis		Passive vocabulary	Active vocabulary
LD	Mean	20.3509	6.2632
	N	57	57
	Std. Deviation	5.69301	4.56120
DLD (SLI)	Mean	25.8060	5.1791
	N	67	67
	Std. Deviation	4.46617	2.87057
Total	Mean	23.2984	5.6774
	N	124	124
	Std. Deviation	5.73674	3.76667

Table 6.
Language psychological mean age

Diagnosis	Gender	Language psychological mean age (years)
LD	Girls	4.34
	Boys	3.86
DLD (SLI)	Girls	4.89
	Boys	5.13

3. Presentation of findings

A statistical analysis (namely, the *t* test) was conducted in order to compare the children in the two groups, with LD and DLD diagnosis. For purposes of this research, we assumed a normal data distribution. The data obtained from this analysis, along with the LSA, indicate that children's language skills differ from one group to the other, in terms of lexical, pragmatic, semantic, syntactic, morphological and phonological aspects.

The results of the analysis are presented in tables 7 and 8, which clearly show that there are significant differences between the two groups, in terms of start of speech therapy age, phonological disorder, passive vocabulary, and language psychological age. Results for active vocabulary do not indicate any statistical difference between LD and DLD children.

Table 7.
Group Statistics

	Diagnosis	N	Mean	Std. Deviation	Std. Error Mean
Start of speech therapy age	LD	57	4.7688	1.04669	.13864
	DLD	67	6.4401	1.47271	.17992
Number of affected speech sounds	LD	57	8.5965	4.58592	.60742
	DLD	67	3.4179	3.59777	.43954
Passive vocabulary	LD	57	20.3509	5.69301	.75406
	DLD	67	25.8060	4.46617	.54563
Active vocabulary	LD	57	6.2632	4.56120	.60415
	DLD	67	5.1791	2.87057	.35070
Language psychological age	LD	57	3.9353	.99883	.13230
	DLD	67	5.0701	1.05355	.12871

The main concern for SLPs remains the differential diagnosis, bearing in mind the particular characteristics of the Romanian language. According to the philosophy of Evidence-Based Practice (EBP) (American Speech-Language-Hearing Association, 2005; Dollaghan, 2007; Meline and Paradiso, 2003), better studies should lead to better case management, in practice. But there are also authors who raise questions about the reverse path, from practice to theory (Green, 2008). In this regard, phonological disorders usually present fewer challenges; but things are different with LD and DLD, especially given that specific terminology for these disorders has constantly evolved over the last 200 years, and still no consensus has been reached yet (Leonard, 2020).

Children with DLD start speech therapy later than children with LD. The most plausible explanation for this is related to the mixed messages that parents receive from their children. These children have a heterogeneous developmental profile, with an average or above average nonverbal skill, in total contrast with their expressive language skills. Most parents hope that their children's ability to express themselves will improve over time, and keep postponing seeking professional help from speech therapists.

Children with LD have a homogenous developmental profile with lower abilities in both verbal and nonverbal skills. Therefore, their parents become aware of their child's developmental needs simply by contrast to older siblings, or to other children of the same age. This leads them to seeking professional help from an early stage.

Another key difference between the two groups is the number of speech sounds affected. LD children have a mean of 8.59 altered phonemes, whilst DLD children have only 3.41. After several months of speech therapy, these phonological disorders decreased in both groups, but phonological awareness remained below the expected level in the LD group. Some DLD children learn to read and write in the preparatory class, although their expressive language remains undeveloped. This is not the case for LD children who learn written language more slowly.

Table 8.
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Diff.
								Lower	Upper
Speech therapy start age	Equal variances assumed	.549	.460	-7.164	122	.000	-1.67138	.23329	-2.13320	-1.20955
	Equal variances not assumed			-7.358	118.434	.000	-1.67138	.22714	-2.12116	-1.22160
Number of affected speech sounds	Equal variances assumed	1.222	.271	7.042	122	.000	5.17858	.73539	3.72280	6.63437
	Equal variances not assumed			6.907	105.464	.000	5.17858	.74977	3.69201	6.66516
Passive vocabulary	Equal variances assumed	3.663	.058	-5.975	122	.000	-5.45509	.91291	-7.26230	-3.64789
	Equal variances not assumed			-5.861	105.462	.000	-5.45509	.93076	-7.30052	-3.60966
Active vocabulary	Equal variances assumed	4.987	.027	1.607	122	.111	1.08405	.67440	-.25098	2.41909
	Equal variances not assumed			1.552	91.302	.124	1.08405	.69855	-.30348	2.47159
Language psychological age	Equal variances assumed	.124	.726	-6.122	122	.000	-1.13489	.18538	-1.50187	-.76791
	Equal variances not assumed			-6.148	120.546	.000	-1.13489	.18458	-1.50032	-.76945

TVAP (Deltour and Hupkens,1980a, 1980b) is a useful and easy to apply tool in speech therapy practice. In addition, the answers given in relation to the active vocabulary can also be analysed for morphological and syntactical issues as well. Significant statistical differences were found for the passive vocabulary, but not for the active one. Children with DLD tend to express themselves more loosely, using words with a well-known meaning. Children with LD are more talkative, but they tend to use more stereotypes in their verbal communication, without much variety in the way they use grammatical categories.

The language psychological age test also highlighted significant differences between the two groups. LD children have a mean language psychological age of 3.93, whilst DLD children – one of 5.07. We can correlate this with the mean age at the start of speech therapy. In addition, DLD children have better subtests results, like digit span and colours (both receptive and expressive).

All these aspects are important in the planning of speech-language intervention. They help SLPs communicate more easily with other specialists and give more pertinent advice to parents.

4. Interpretation of findings

Quantitative processing of the above results indicates significant statistical differences between children with LD and those with DLD for language levels in discussions. The language issues arising, from a linguistic point of view, are: a distortion of verbal emission; impaired or undeveloped phonemic awareness; reduced phonological processing skills; a rigid linguistic core; anomic manifestations; substitution errors; excessive use of functional descriptors; and forced generalisation. These characteristics are more pronounced in DLD children. The syntax used by children with DLD is marked by a simplification or even an omission in grammatical structures; or grammatical structures limited to the present time; or reversed order of words; and inadequate combination of grammatical forms.

In the case of DLD, we also notice qualitative differences in the pragmatic language use. These children give tangential answers; they fail to provide meaningful information; have a limited extent of speech content; major difficulties in maintaining or changing the topic; difficulties in initiating interactions; a lack of assertiveness in the conversational act; and they also fail to ask relevant questions in any given context.

In some DLD children, we have also observed unusual speech pauses, difficulties in speaking one at a time, in using gestures and facial expressions, in maintaining visual contact, as well as problems recognising the meaning of certain terms or in integrating the para-verbal and nonverbal elements of communication.

LD children attend speech therapy earlier compared to DLD children. They have distinct receptive and expressive language profiles. If seeking professional help is postponed, this can have serious consequences not only for the children's education, but also their social integration.

The academic challenges they face increase as the child moves from one grade to another. Postponing the start of speech therapy has the immediate effect of increasing the gap between what it is requested from the child and what he / she can achieve in terms of language skills.

Summing up all these findings, we consider that the main features of DLD vs. LD disorders are: a significant gap between receptivity and language expressiveness; deficient directed expression compared to spontaneous expression; impaired verbal fluency (without proper rhythm disturbances), as well as morphological and syntactic disorders that give the appearance of native language being used as a foreign language.

5. Limitations and future studies

The current study focused on describing the language skills of some children with DLD and LD aged between 3 and 12; so, our research findings are specific for this age group. The language profile changes from age to age (Conti-Ramsden, Botting, and Faragher, 2001), so before extending our findings to a younger or older age-group, further investigations would have to be undertaken.

Another limitation of this study is the use of an adapted technique of those proposed by Owens (Owens and Pavelko, 2020) for LSA. The larger the verbal sample, the more accurate the findings, with regards to quantitative and qualitative aspects of vocabulary and grammar for DLD or LD children.

Finally, the size and structure of the sample is also a limitation. As with any study, in order to be able to generalise, a representative and paired sample is preferred. A larger sample would allow adding some

valuable information about the children's socio-cultural environment, which could contribute to a better understanding of the disorders and their treatment.

6. Conclusions

Our analysis has shown that the lower level of language learning abilities for DLD children leads to impairment in several aspects of their everyday life. These children have a higher risk of experiencing difficulties when they face structured tasks. The first signs of DLD can be observed from the age of 3 and their early recognition allows an effective intervention, which can prevent further educational integration failures. DLD, unlike LD, has markers that require specific measures from the diagnosis phase to the design of the educational-therapeutic intervention plan.

Another important result of the present study is the urgent need for increased awareness (at all levels, from parents to educational partners and SLPs) regarding the optimal therapy start time. The data presented here indicates that a delayed start of the therapy for DLD children entails risks for both educational and social integration.

A significant number of studies on LD and DLD have been conducted over time involving English speaking or bilingual children (e.g. McGregor, Goffman, Horne, Hogan, and Finestack, 2020; Leonard, 2014; Prelock and Hutchins, 2018; Fulcher-Rood, Castilla-Earls, and Higginbotham, 2018; Klee, Pearce, and Carson, 2000; Dale, Price, Bishop, and Plomin, 2003; Parisse and Maillart, 2009; Buiza, Rodríguez-Parra, González-Sánchez, and Adrián, 2016). Along with these, our study adds some specific information for Romanian children. It can also be a starting point for future in-depth research.

Finally, we consider that a systematic application of a coherent therapeutic linguistic program, customised to each child, can lead to a quantifiable progress for these children. Indeed, progress must be visible and measurable, as suggested by the notion of EBP that is key in any type of therapy: medical, psychological, as well as educational.

Conflict of interests

The authors declare no conflict of interests.

Appendix A

Speech sound disorder recording sheet

1. [a]	2. [u]	3. [i]	4. [e]	5. [o]	
6. [m]	7. [n]	8. [r]	9. [k]	10. [l]	
11. [ə]	12. [tɕe]	13. [s]	14. [v]	15. [ʃ]	
16. [t]	17. [tɕi]	18. [p]	19. [d]	20. [ɨ]	
21. [b]	22. [ʦ]	23. [g]	24. [dʒe]	25. [ɦ]	
26. [f]	27. [dʒi]	28. [ʒ]	29. [ke]	30. [z]	
31. [ki]	32. [ɻe]	33. [ɻi]	34. [y]	35. [ks/gz]	
36. metathesis	37. omissions	38. random phonological manifestations	39. diphthongs; triphthongs	40. consonant clusters	

Note. International Phonetic Alphabet notation are use. For each affected speech sound the exact situation is noted – omission, distortion or replacement – for all three positions in the word structure (initial, medial, or final).

Appendix B

Language Psychological Age Test – examples

1. Antonymous (*with intuitive support*)

The child is shown images of objects with opposite properties (e.g. a large and a small mushroom, a new and an old car, a tall and a short person etc.). The speech therapist names the first image and invites the child to name the other. Correct answers are noted, regardless of whether the child pronounces the word correctly or not.

2. Filling the gaps in a short narrative

The speech therapist makes sure that the child understands the task, which is to complete the story by adding an appropriate word. The story describes a particular incident, e.g. two girls getting caught in the rain whilst walking outside.

3. Digit span

The child must repeat the numbers pronounced by the speech therapist. We start with two numbers (e.g. 2 and 4); then add one number to each of these, and so on; the last series consists of six numbers (6, 9, 2, 3, 4, 8). The test stops with an incorrect series.

4. Knowledge of materials

The child must answer the question "What is this made of?" in relation to a series of objects (e.g. table, teaspoon, window, shoes, houses, etc.). Count the appropriate answers.

5. Antonymous (*without intuitive support*)

This test uses only verbal stimuli – namely, words for which the child will have to find the antonym (e.g. warm - ..., beautiful - ..., good - ... etc.)

6. Colors naming (*receptive and expressive*)

This test quantifies the number of colors that the child names correctly, as well as the number of colors that he / she can name in one minute (time it!), without visual support. The final score is given by the mean of the two answers.

7. Knowledge of verbs (*receptive and expressive*)
The child must identify the correct action (i.e. verb) from a series of pictures. He / she must also physically demonstrate certain actions (i.e. verbs) which are pronounced by the SLP.

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